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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/223,274	12/30/98	LEE	C 06192.0057

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EXAMINER

MALINOWSKI, W

ART UNIT PAPER NUMBER

2871

DATE MAILED: 08/24/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

**Office Action Summary**

Application No.

09/223,274

Applicant(s)

LEE ET AL.

Examiner

Walter Malinowski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 December 1998.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☒ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the mixture of spacer types of Claim 6 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogawa et al. (Ogawa), Japanese Kokai No. 57-613.

Ogawa discloses a liquid crystal display comprising a first and a second panels spaced apart from each other and having a first and a second electrode 1, respectively, separated from each other which generate electric field by applying voltage; a liquid crystal layer 4 interposed between the first and second panels 2, wherein the spacers

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align liquid crystal molecules near the spacers in a substantially regular manner with respect to surfaces of the spacers (figures 2 and 3).

As to Claim 2, Ogawa shows the long axes of the liquid crystal molecules are aligned substantially parallel to the first and second panels (figures 2 and 3).

As to Claim 7, Ogawa discloses first and second electrodes (figures 2 and 3).

Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kondo et al. (Kondo), Japanese Kokai No. 3-69917.

Kondo discloses a liquid crystal display comprising a first and a second panels 3 and 4 spaced apart from each other and having a first and a second electrode 5 and 6, respectively, separated from each other which generate electric field by applying voltage; a liquid crystal layer 9 interposed between the first and second panels 3 and 4, wherein the spacers 10a and 10b align liquid crystal molecules near the spacers in a substantially regular manner with respect to surfaces of the spacers (see figures 1-3).

As to Claim 7, Kondo shows first and second electrodes 5 and 6.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (Ogawa), Japanese Kokai No. 57-613.

Ogawa discloses a liquid crystal display wherein the spacers align liquid crystal molecules near the spacers in a substantially regular manner with respect to the surfaces of the spacers, but does not disclose a pair of polarizers.

Polarizers are well known in the liquid crystal display art.

As to Claim 3, to heighten contrast and make a better display image, it would have been obvious to use polarizers in the device of Ogawa.

As to Claim 4, Ogawa shows the spacers align the liquid crystal molecules near the spacers substantially parallel to surfaces of the spacers (figure 2).

As to Claim 5, Ogawa shows the spacers align the liquid crystal molecules near the spacers substantially perpendicular to the surfaces of the spacers (figure 3).

As to Claim 6, Ogawa shows both spacers which align the liquid crystal molecules parallel and perpendicular to the surfaces of the spacers. To optimize device performance, it would have been obvious to use a mixture of these spacers.

Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (Kondo), Japanese Kokai No. 3-69917.

Kondo discloses a liquid crystal display having spacers which orient the liquid crystal molecules in a regular fashion and having polarizers 13 and 14, but does not clearly disclose the long axes of the liquid crystal molecules are aligned substantially parallel to the first and second panels nor that the first and second polarizers have crossed polarization axes.

As to Claim 2, Kondo shows the long axes of the liquid crystal molecules are aligned substantially parallel to the first and second panels (figures 2 and 3).

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As to Claim 3, crossed polarizers are well known in the liquid crystal display art and, to improve contrast, it would have been obvious to use them.

As to Claim 4, Kondo shows the spacers align the liquid crystal molecules near the spacers substantially parallel to surfaces of the spacers (figures 1 and 2):

As to Claim 5, Kondo shows the spacers align the liquid crystal molecules near the spacers substantially perpendicular to the surfaces of the spacers (figures 1 and 3).

As to Claim 6, Kondo shows both spacers which align the liquid crystal molecules parallel and perpendicular to the surfaces of the spacers (figure 1).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sakai et al., U.S. Patent No. 6,091,476

Sakamoto et al., U.S. Patent No. 5,648,828.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter Malinowski whose telephone number is (703) 308-3172. The examiner can normally be reached on M-F 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Sikes can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7721 for regular communications and (703) 308-7721 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

wjm  
August 19, 2000

*Walter Malinowski*  
Walter J. Malinowski  
Primary Examiner  
Technology Center 2800